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ABSTRACT

To determine why some children find textbooks to be much more difficult to understand than teachers' presentations, four reading selections for middle grade readers were analyzed, as were tape recorded lessons prepared by ten teachers on the basis of the same selections. Excerpts from one of the written passages and excerpts and analysis of one teacher's presentation suggest four general advantages that teachers have over textbooks in getting children to understand and remember the material presented: they can tailor their messages to the background and level of understanding of the children in their classes; they can remind students of relevant information they already know and help them to see how new information is related to prior knowledge; they can focus students' attention on a passage as a whole or on selected parts of a passage; and they can monitor comprehension. The results of the study point to ways that textbook authors may modify written passages so as to minimize their limitations, as well as to ways that teachers can optimize their classroom presentations and their reading comprehension instruction. (GT)

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CENTER FOR THE STUDY OF READING

Reading Education Report No. 9

SOME REASONS WHY TEACHERS ARE EASIER TO UNDERSTAND THAN TEXTBOOKS

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Some Reasons Why Teachers Are Easier to Understand Than Textbooks

Teachers often report that many of their students have difficulty learning new information from textbooks, but that these same students seem quite able to understand and learn material presented orally in class. In this paper, we will consider the question of why some children find textbooks to be so much more difficult than teachers' presentations.

Different views of reading lead to different answers. One very common view is that reading is basically equivalent to listening with the additional step of decoding written words to speech (Fries, 1962). Those who hold this view emphasize that the textbook might contain words the students cannot decode, and vocabulary and syntactic structures that the students do not know. This view leads to suggestions that remediation focus on decoding, vocabulary and syntax. An alternative view is that both reading and listening require the interplay of a variety of complex processes and that, although there are many similarities, there may be important differences between listening and reading in addition to those having to do with decoding, vocabulary and syntax (see Kleiman & Schallert, 1978, and Rubin, 1977, for further discussion). It is this latter view that we, as cognitive psychologists, favor.

Sampling Written and Spoken Presentations

In order to identify differences between some of the listening and reading tasks children encounter in school, we have been studying the ways in which information is presented by teachers and by authors of children's textbooks. In our initial study, to be described in this paper, we wanted a small but fairly typical sample of the expository texts children are expected to read, and we wanted tape-recordings and observations of teachers' presentations of comparable material to their classes. To obtain these samples, we began with four selections from the SRA Reading Laboratory that had been adapted for middle-grade readers from material originally intended for adults. To obtain samples of teachers' presentations, we had ten teachers use the adult articles as a basis for preparing a classroom presentation. The teachers, each speaking on one of four topics, were tape-recorded as they engaged their students in a lecture/discussion, complete with student questions, responses and comments. One of the authors (DS) observed all of the presentations and took notes on aspects of the presentations that might not be captured in transcriptions of the tape recordings.

These small samples are, of course, inadequate for drawing general conclusions about the many types and levels of written materials, or about how most teachers present information on most topics. However, they have proven adequate to identify some of the potential advantages that teachers have over textbooks in helping children to understand and remember the material. In the next section, we will present excerpts

from one written passage and excerpts and analysis of one teacher's presentation. The differences between teachers and textbooks, exemplified by these excerpts, will then be discussed in terms of four advantages that teachers have over textboo . In the final section, we will discuss some implications of these advantages for teachers and for writers of children's textbooks.

Excerpts From a Textbook and a Teacher's Pr sentation

The topic of the passage and presentation from which we will draw examples is sequoia trees. Both the written passage and the teacher's presentation discussed several attributes of the trees, such as their size and age, and the history of efforts to serve them. For our examples, we will focus solely on information about the size of the trees. We have chosen these excerpts because they provide clear examples of the contrasts we will discuss. The teacher in our example may be particularly adept at presenting information to her class, but the types of things she does are found to some extent in all ten presentations in our study.

The SRA written passage contains 63 sentences. Those dealing either directly or indirectly with size are as follows:

> Sequoia National Park in California is the home of the oldest and biggest living things. They are the famous "big trees," the giant sequoias.
>
> At first, reports of these trees were thought to be tall tales. Imagine trees thirty feet thick at the bottom and three hundred feet high!...

As the sequoia grows, the lower branches drop off. Finally the nearest branch may be more than a hundred feet above the ground....

Sometimes a fallen tree has been hollowed out by fire. Then it becomes a tunnel through which visitors can walk....

Without doubt the most famous tree in the park is the General Sherman. It may be the biggest and oldest living thing in the world. This tree is as tall as a twenty-seven-story skyscraper. It contains enough lumber to build a good sized village. It would make a box large enough to hold the greatest ocean liner ever built. And at least forty freight cars would be needed to haul away just its trunk....

Thousands of the big trees were cut down and cut up. Often they were blasted with dynamite into pieces small enough to handle.

The teacher's presentation differed from this written presentation in several interesting ways. We will discuss some of what she said about the size of the sequoias. Her presentation began with:

Teacher: Today we are going to learn about something that's the oldest and the biggest living thing that we know of. The oldest and the biggest. Now think just a minute before you get your hand up. The oldest and the biggest. What do you think it is -- Jeff?

Student: Dinosaur.

T: Why is dinosaur not a good answer?

S: Not living.

This type of interchange continues with students' suggesting elephant, whale, shark and the earth, until:

S: Trees. Trees are living.

T: All right. Say it again. Listen again. Heidi's got the answer over here. Say it again.

S: Sequoia tree.

T: Sequoia trees. How many of you've ever heard of a sequoia tree?

With this brief introduction to the lesson, the teacher has done several things which may help her students understand and learn the material. First, she began by finding out about the children's prior knowledge. This provided an opportunity to correct their initial responses, and, in so doing, to make clear the characteristics that are central to the discussion. Moreover, it enabled her to remind the children of information they already knew, and to contrast the new information with that already known. In addition, she immediately got the attention of the students and motivated them to participate actively in learning new information. When one student gave the correct answer, note how the teacher directed the class' attention to that child, had the child repeat it, and then repeated the answer herself. The teacher then went on to find out more about the students' prior knowledge by asking how many have heard of sequoia trees.

The teacher also had ideas about what she could and could not assume the children already knew. For example, before describing exactly how big the trees actually are, she asked class:

T: When we're talking about big, we're talking about height, and what else? Not just height, but what else? David?

S: Width?

T: All right. Width. What else, maybe? When we think about something being big, it's tall, and it's wide, and it's what else?

S: Heavy.

T: Heavy. O.K. So, we're talking about its mass or its volume.

Next, the teacher made use of her knowledge of what the students knew to relate new information to things already familiar to them:

T: Some of them grow 300 feet tall. They might grow a hundred and eight feet around.... The thickness of the trunk might be thirty feet. Now let's go back. How tall is 300 feet? Well, I called the Forum 30 [the tallest local building] and it's taller than 300 feet, so I couldn't use that as an example, but if we were to take the hallway out here, and stand it straight on end, it wouldn't be tall enough. I'm talking about from that door way down, you know how far it is down there. It's a long way. It's not tall enough. Now some of them get that tall, but some of them get even taller. Three hundred feet is the length of this sidewalk out here, from where you get on it at the road, over here to the ramp. That's 300 feet. Imagine that sidewalk standing straight up this way. O.K.? That's 300 feet.... [She continues to discuss the other dimensions in similar ways.]

Here, because of her knowledge of what the children already knew, the teacher could use specific examples with which the children were very familiar. It is interesting to note that all three teachers in our study

who spoke about sequoia trees mentioned the Forum 30 building when discussing their height. In our samples, examples from the children's everyday experience are quite common. This personalizes the presentation in a way that would be difficult for the textbook writer. The examples of the Forum 30 building and the sidewalk outside the school are clearly much more concrete and familiar to the children than the examples used in the written text.

The children also took advantage of the fact that they can interact with the teacher. We have some instances of children asking specific questions, such as a child who interrupted the teacher's discussion of the General Sherman Tree as the world's largest:

S: What about the redwood trees?
T: The redwood trees, Jeff, are taller. Some of them are taller, but they're not as big around.

There are not as many examples of children asking specific information-relevant questions as one might expect. However, teachers often seemed to be responding to nonverbal cues from the children, such as puzzled looks or gazes directed out the window. This feedback and the teachers' knowledge of their students enabled them to avoid spending a lot of time on things the children already knew.

One other way in which the presentations of the teachers differed from the written text is that the teachers emphasized certain points by stating them repeatedly. For example, in the above excerpt the teacher repeated the information about the height of the sequoias many times and in several different ways. In addition, most of the teachers in our

sample reviewed information with their students. After the description of the size of the trees, the teacher in our example discussed other things about them such as their age and resistance to fire. She then began a complete review of her presentation, checking the students' acquired knowledge:

> T: O.K. Let's go back and talk about what we've -- I hope you know some things about sequoia trees now that you didn't know when I started. Let's start out with ... What do you know about the size?
>
> S: It's supposed to be about 300 feet.
>
> T: All right. It may grow -- of course they're not all 300 feet -- but they may grow to be 300 feet tall. What else do you know about its size?

In this manner, the most important points were checked, and if the children did not seem sure of them, they were restated by the teacher.

Four Advantages of Teachers Over Textbooks

Our study of teachers and textbooks has led us to identify four general advantages that teachers have over textbooks in getting children to understand and remember the material presented. We call these tailoring the message, activating prior knowledge, focusing attention, and monitoring comprehension. These four are interrelated and teachers often say things that serve more than one of these purposes at the same time. However, it is useful to separate them for purposes of discussion.

Tailoring the message refers to teachers adapting their presentations to the children in their classes. Teachers can successfully tailor their

presentations because they know a great deal about what their students already do and do not know, and because they can interact with the children -- ask them questions, receive questions from them, note puzzled looks, etc. Message tailoring can also occur in the vocabulary and sentence syntax used: Teachers may use simpler words and sentences than those found in the text. Since we have not yet analyzed our samples for vocabulary and sentence syntax, we will focus only on the content of what was said, not the exact words or syntax used.

In the above example, we saw how the teacher checked the students' prior knowledge (e.g., whether they already knew what is the biggest and oldest living thing) and then used this information to tailor her message. Clearly the textbook writer, who must write for many unknown children cannot tailor the message as appropriately. Message tailoring is also seen in the teacher's use of the size of the tallest local building and of the sidewalk outside the school to clarify how big the trees actually are. Message tailoring also occurs as a result of children's questions, responses to the teacher's questions, and nonverbal signs of understanding or puzzlement. Obviously, these interactions cannot occur between the writer and reader. As Socrates states in the dialogue Phaedrus. "Written words seem to talk to you as though they were intelligent, but if you ask them anything about what they say ... they go on telling you the same thing forever."

Activating prior knowledge refers to teachers' reminding students of information they already know which is relevant to the current topic

and helping them see how new information is related to knowledge they already have. Sometimes teachers do this explicitly, as when the teacher asks questions like: "Did we learn something last week that is related to this?" At other times the direction is more subtle, as in the example given above where the teacher started by getting the students to say what they thought might be the oldest and largest living thing. This enabled her to contrast sequoia trees with other things the children already knew about, and this may have helped them relate the new information to the known. Similarly, when she mentioned the height of the Forum 30 building, the length of the sidewalk, and the width of the classroom she was giving the material more concrete meaning for the students.

Focusing attention refers to two related activities. First, teachers try to influence the intensive aspect of students' attention. They increase the amount of interest and motivation of their students by asking direct questions, reinforcing correct responses, eliciting guesses where appropriate, and encouraging comments. In addition, they monitor the children's attention and try to keep it focused on the material presented. Secondly, teachers direct children to pay attention to particular parts of the message, thus influencing the selective aspect of attention. The teacher in our example directed the students to focus on important information both by repetition and by explicitly saying, "this is important."

Comprehension monitoring refers to teachers' checking whether the children have understood and remembered the important parts of the

presentation. Teachers very often ask the children questions about the material they have presented. The teacher in our example did this for all the important points at the end of her presentation. Other teachers in our sample did this at various times during their presentations. This, of course, relates to message tailoring in that the teachers use what they find out in comprehension monitoring to tailor their messages appropriately.

Summary and Implications

Some of the differences between learning from teachers and learning from textbooks are that teachers can tailor the presentations to the students' background and level of understanding, provide external attention focusing and comprehension monitoring, and remind the children of relevant knowledge they already possess. We do not know the prevalence of teachers' use of these potential advantages, but all ten teachers in our sample made some use of them.

To become successful at learning by reading, children must learn to understand material that is not as well adapted to them as teachers' presentations may be. They must internalize the processes of focusing attention, picking out the important main points and integrating the new information with relevant prior knowledge. Finally, they must determine on their own whether they have understood a text and what to do if they have not. Research on the development of these abilities (e.g., Anderson, 1977; Baker, 1979; Baker & Stein, 1978; Brown & Smiley,

1977) has shown that at least some children have difficulties in these areas, although the scope and exact nature of these difficulties are as yet unknown.

In terms of understanding how oral and written presentations can differ, much work remains to be done. The scope of the study we have discussed is obviously limited by the small size of our language samples. Nevertheless, some practical recommendations to textbook writers and teachers can be drawn.

Authors who are aware of the disadvantages of the written mode when compared to oral presentations may modify the written product so as to minimize its limitations. For example, authors can provide clear cues as to what they consider most important. Questions appearing at critical junctures in the text may help the readers evaluate their comprehension. In trying to activate readers' prior knowledge, authors can choose examples which are likely to be familiar to most readers or else provide more than one example so that if a reader does not understand one, a second or third is available. For certain critical and difficult concepts, authors might consider writing explanations in entirely different ways, indicating clearly the nature of the repetition, and including all explanations in the final product. The degree of message tailoring could be further increased if materials were tested with a sample of readers from the target population before they were published. Thus, unfamiliar examples and parts of the texts that assume background knowledge that many students lack could be

identified. These suggestions may be difficult to implement in certain cases, but we believe they are worth considering.

Finally, this study points to ways in which teachers can optimize their classroom presentations and their reading comprehension instruction. For example, we know from our sample that some teachers are better than others in taking advantage of opportunities to focus students' attention, tailor the message appropriately, activate prior knowledge and check whether students are comprehending the material. When it comes to reading instruction, our analysis leads to specific questions teachers can ask about students who understand material better when it is presented orally than when they read it. Such questions include: Do the students succeed in distinguishing important from unimportant information? Do they try to relate the new information to what they already know? Do they monitor their own comprehension? Answers to such questions may help in directing remediation efforts to specific problems.

A final comment lest we be misinterpreted: We do not advocate rewriting all textbooks so that they will be more like oral language and therefore easier to comprehend. An important aspect of learning to read is acquiring the ability to deal with the full range of written language and not just with "watered-down" versions. However, we believe that teachers who are sensitive to the potential difficulties existing when students make the transition from learning by listening to learning by reading may be more successful in effecting reading comprehension in their students.

References

Anderson, R. C. Schema-directed processes in language comprehension (Tech. Rep. No. 50). Urbana: University of Illinois, Center for the Study of Reading, July 1977.

Baker, L. Do I understand or do I not understand: That is the question (Reading Education Rep.). Urbana: University of Illinois, Center for the Study of Reading, 1979, in preparation.

Baker, L., & Stein, N. L. The development of prose comprehension skills (Tech. Rep. No. 102). Urbana: University of Illinois, Center for the Study of Reading, September 1978.

Brown, A. L., & Smiley, S. S. The development of strategies for studying prose passages (Tech. Rep. No. 66). Urbana: University of Illinois, Center for the Study of Reading, October 1977.

Fries, C. Linguistics and reading. New York: Holt, Rinehart & Winston, 1962.

Kleiman, G. M., & Schallert, D. L. Some things the reader needs to know that the listener doesn't. In D. Pearson & J. Hansen (Eds.), Twenty-seventh yearbook of the National Reading Conference. Clemson, S.C.: National Reading Conference, 1978.

Rubin, A. D. Comprehension processes in oral and written language (Tech. Rep. No. 35). Urbana: University of Illinois, Center for the Study of Reading, April 1977.

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